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**TUNABLE DISPERSION COMPENSATOR
ABSTRACT OF THE INVENTION**

A tunable dispersion compensator is disclosed. The dispersion compensator includes an array waveguide grating having a plurality of array waveguides. A component is configured to receive portions of a light signal from the array waveguide grating and to combine the portions of the light signal into an output light signal having a dispersion profile. At least a portion of the array waveguides include an effective length tuner configured to tune the effective length of an array waveguide. The effective length tuners are configured to tune the effective lengths of the array waveguides such that the dispersion profile of the output light signal is tuned.

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